Green Power: Who's Selling, Who's Buying

Landfill Methane Outreach Program
Green Power Workshop
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Kurt Johnson
EPA Green Power Partnership
johnson.kurt@epa.gov
202-564-3481

Presentation Outline

EPA Green Power Partnership

- Defining Green Power
- State Renewable Portfolio Standards
- Green Power: Who's Selling, Who's Buying
- Market Outlook

Green Power

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- Electricity from renewable energy sources
  - Wind
  - Solar (photovoltaic and thermal)
  - Geothermal
  - Some Hydro
  - Biomass (including LFG)

Shaping A Definition of Green Power

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- State Definitions
- Federal Energy Legislation
- NGOs
  - Green-e
  - Renew 2000
  - National Resources Defense Council, REPP etc.

State Renewable Portfolio Standards

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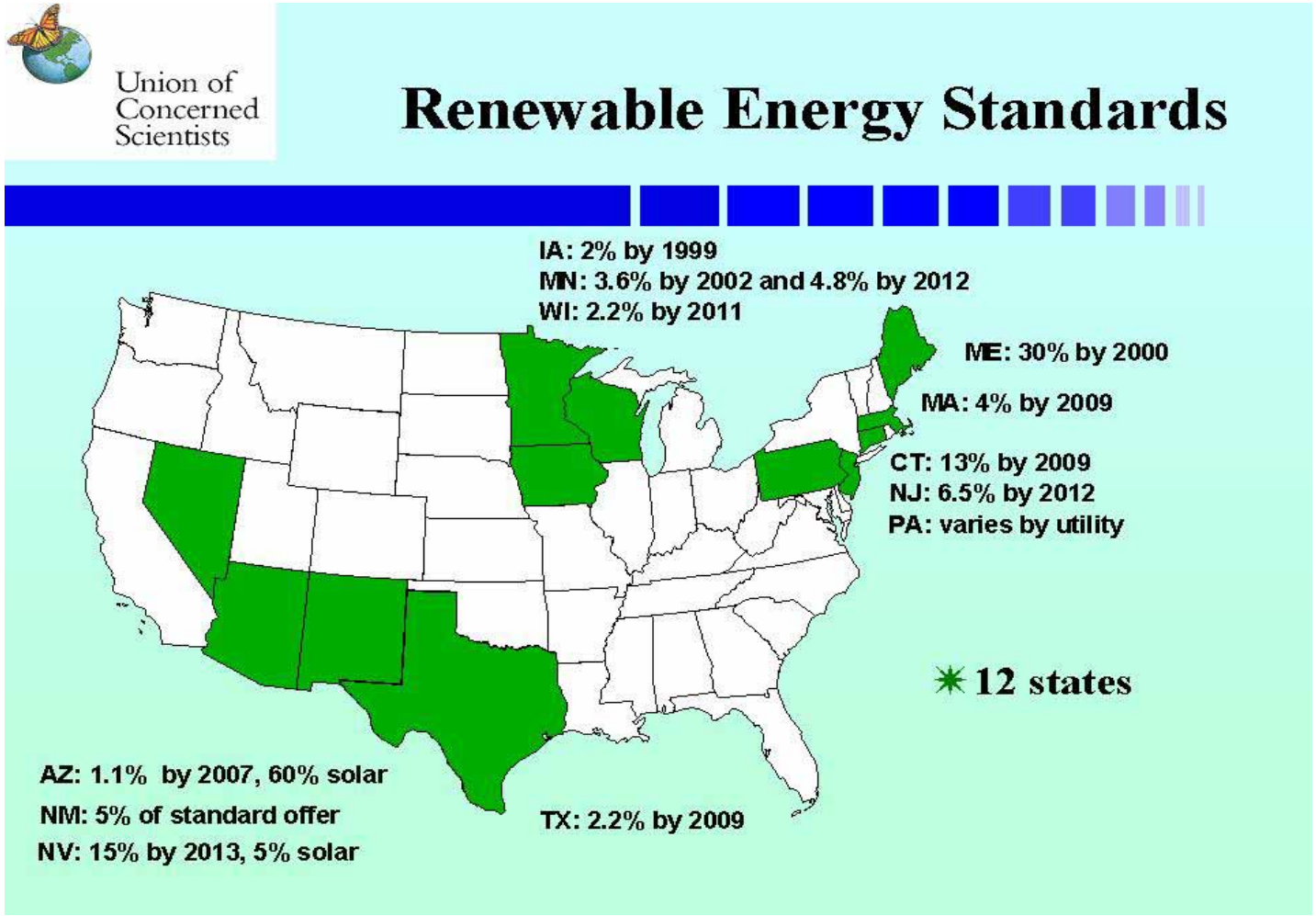

Green Power Markets Overview

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- 40 million U.S. households (40%) have access to green power through competitive markets or utility green pricing programs
- 52% to 95% of residential customers in 12 utility service territories said they are willing to pay more on their electric bills for renewable energy (Farhar 1999)
- 47% to 62% of non-residential customers indicate an interest in green power even it is costs more (Holt et al. 2001)

Options for Selling Green Power

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- **Green power marketers** sell in competitive markets with multiple suppliers and service offerings.
  - Transition to competitive markets has slowed
- **Green pricing** is available in monopoly service territories
  - Green pricing is expanding
- **Green tags** are available nationwide
  - Green tag vendors are multiplying

Green Power Marketers Map

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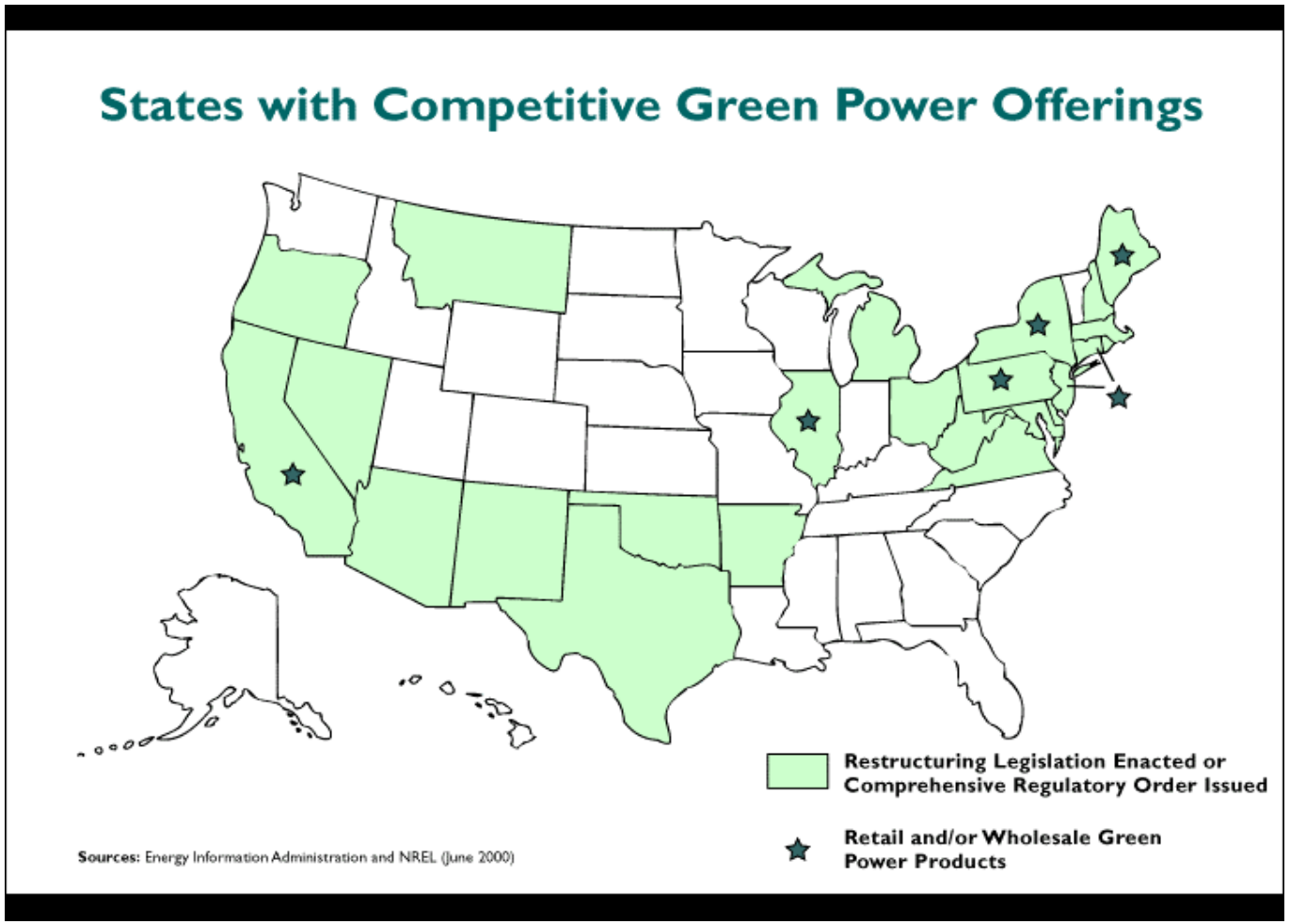

Green Marketer Premiums

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Product Name	Price Differential	Resource Mix
Connecticut		
EcoWatt	1.0¢/kWh	67% small hydro, 27% landfill gas, 6% new wind
Green Mountain Energy	0.5¢/kWh	5% wind, 45% biomass and small hydro
ReGen	3.6¢/kWh	100% renewable energy blocks, solar and landfill gas
Massachusetts		
ReGen	3.6¢/kWh	100% renewable energy blocks, solar and landfill gas
New Jersey		
EcoSmart	-1.35¢/kWh	1% new renewables, 50% large hydro
Enviro Blend	-.45¢/kWh	45% small hydro/landfill gas, 50% large hydro, 5% new
Pennsylvania		
50% Hydro	-0.02¢/kWh	50% large hydro
EcoChoice 100	0.7¢/kWh	100% landfill gas, 5% new
New Wind Energy	2.5¢/kWh	100% wind kWh-blocks
EcoSmart	-.15¢/kWh	1% new wind, 99% natural gas and hydro
Enviro Blend	0.79¢/kWh	45% small hydro and landfill gas, 5% new
Nature's Choice	1.35¢/kWh	95% small hydro/landfill gas, 5% new
100% Renewable	1.86¢/kWh	100% landfill gas, 5% new
Rhode Island		
ReGen	3.6¢/kWh	100% renewable energy blocks, solar and landfill gas
Texas Retail Competition Pilot		
100% Wind Power	n/a	100% Wind
Source: NREL		

Green Pricing Map

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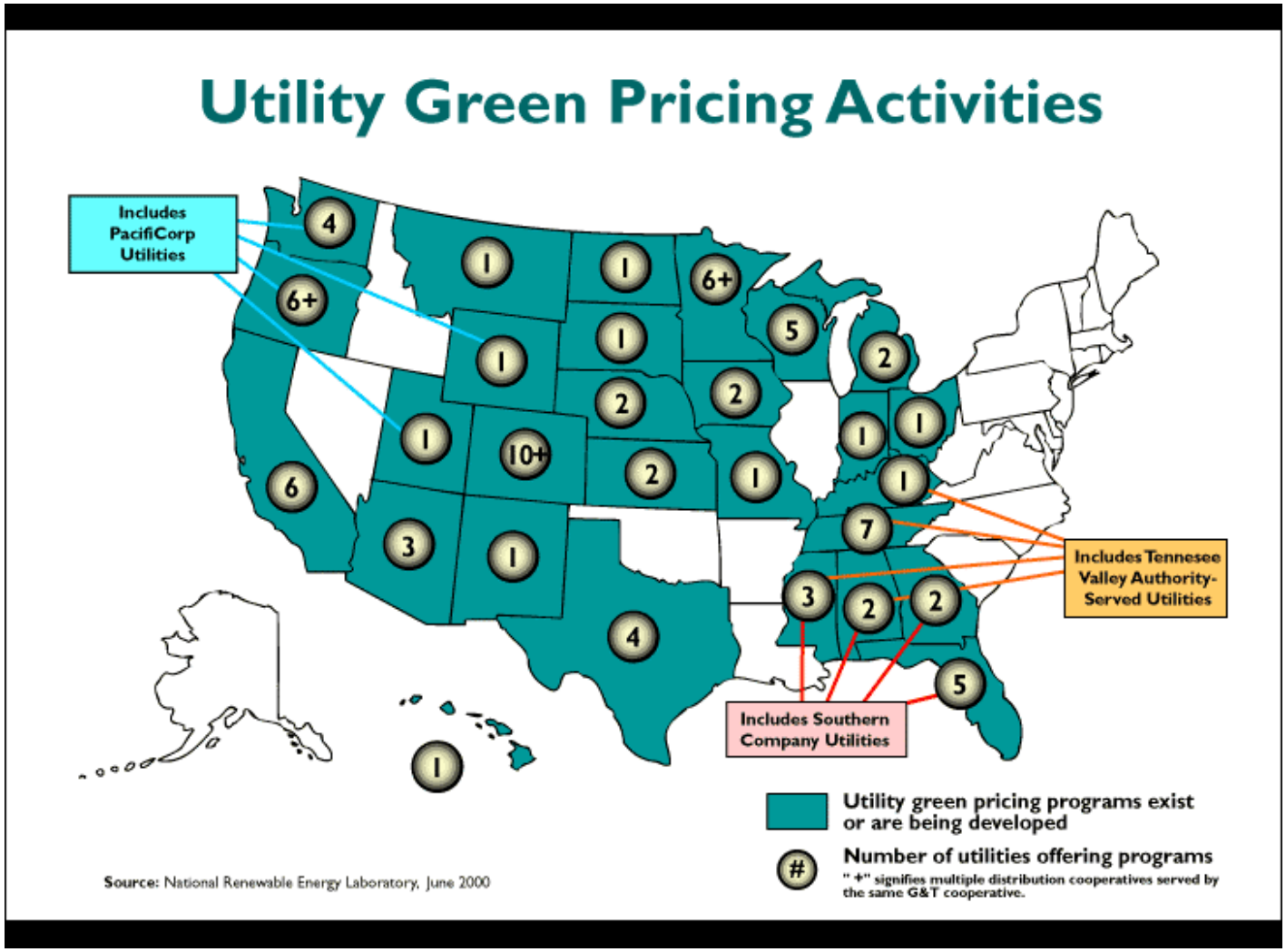

Green Pricing Programs

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- Energy-based Programs
  - Low-cost renewable energy is most competitive with bulk power generation (Wind, Landfill gas)
  - Premiums generally range from $0.01 to $0.03 per Kwh
- Contribution Programs
  - Customers and utilities assist in funding renewable energy project development
- Capacity-based Programs
  - Customers purchase fixed blocks of electric capacity (often PV)
  - Premium can be very high

Green Pricing Trends

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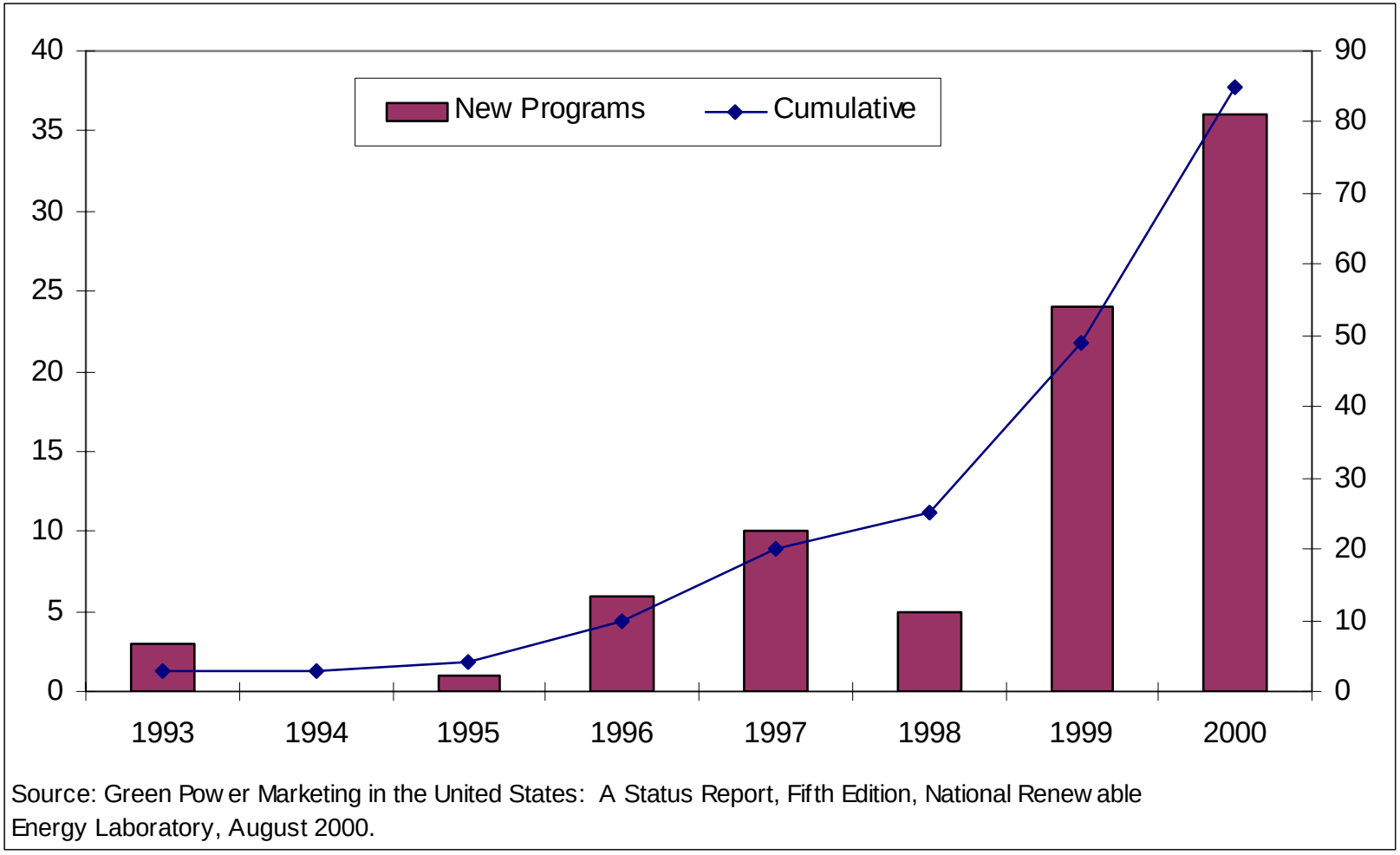

Source: Green Power Marketing in the United States: A Status Report, Fifth Edition, National Renewable Energy Laboratory, August 2000.

New Renewables Because of Green Pricing

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New Renewable Resources Supported through Green Pricing of Top 10 Utility Programs (as of June 2001)			
Rank	**Utility**	**Resources Installed**	**New Capacity**
1	Los Angeles Department of Power and Water	Wind/various	25.0 MW
2	Austin Energy	Wind/PV	23.2 MW
3	Public Service Company of Colorado	Wind	15.8 MW
4	Sacramento Municipal Utility District	LFG/PV	10.2 MW
5	Madison Gas and Electric	Wind	8.2 MW
6	Wisconsin Electric	Wind/hydro/LFG	7.2 MW
7	Eugene Water and Electric Board	Wind	6.5 MW
8	Wisconsin Public Power Inc.	Hydro	6.0 MW
9	Platte River Power Authority	Wind	5.3 MW
10	Alliant Energy	Wind/LFG	4.6 MW
Source: NREL			

Federal Procurement

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- Executive Order 13123

Calls upon federal agencies to purchase renewable energy. Facilities required to purchase 3% of electricity from renewable sources by 2005 and 7.5% in 2010.

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- Open to businesses, organizations and state and local governments
- Partners pledge to replace a portion of electricity consumption with green power in the next year
- Commitment can be on a facility, operating unit, state-wide or national basis
- Commitment levels range from 2% to 15%

Green Power Value to Purchasers

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- Environmental benefits
- Employee relations
- Public image
- Hedge against volatile fossil fuel prices/reduced exposure to regulatory changes

Founding Partners

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- 3M Research Boulevard Facility, Austin, TX
- Batdorf & Bronson Coffee Roasters
- Carnegie Mellon University
- Cascade Engineering - Michigan facilities
- City of Chicago
- City of Portland
- City of Santa Monica
- Connecticut College
- Fetzer Vineyards - production facilities
- Ford Motor Co. - U.S. manufacturing facilities
- General Motors Co. - Service, Parts & Operations facilities
- Global Energy Concepts
- Interface Flooring Systems - Troup County, GA facility
- Johnson & Johnson - Select facilities in California, New Jersey and Texas
- Kinko's
- New Belgium Brewing Company
- Steelcase - Corp. Headquarters
- U.S. Department of Energy - NREL, Denver Regional Field Office, Golden Field Office
- U.S. Environmental Protection Agency
- University of Colorado - Student Union
- Xantrex Technology, Inc.

Partnership Website
www.epa.gov/greenpower

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New Renewables Capacity from State Standards

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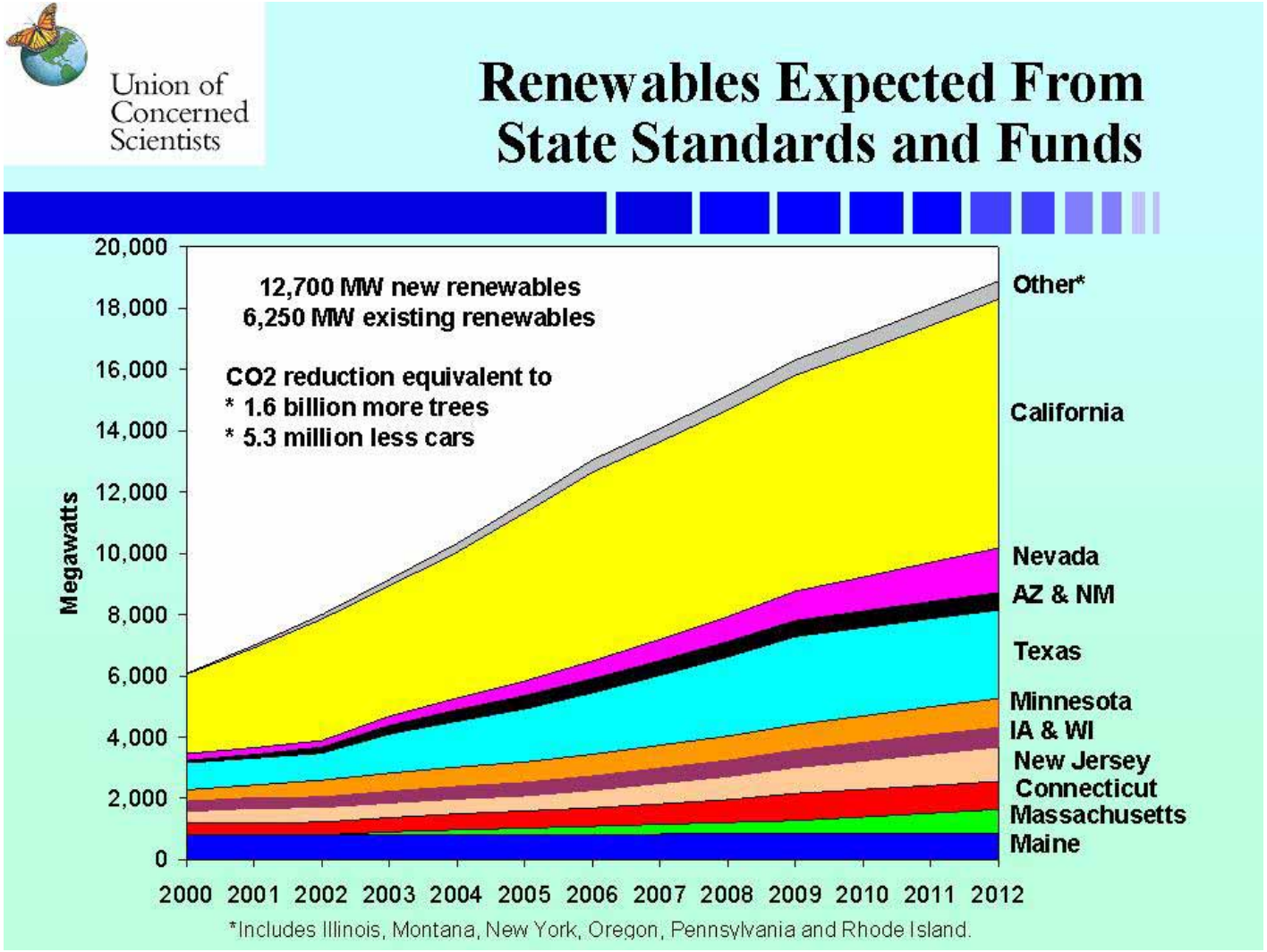

New Renewables Capacity from Green Power Markets

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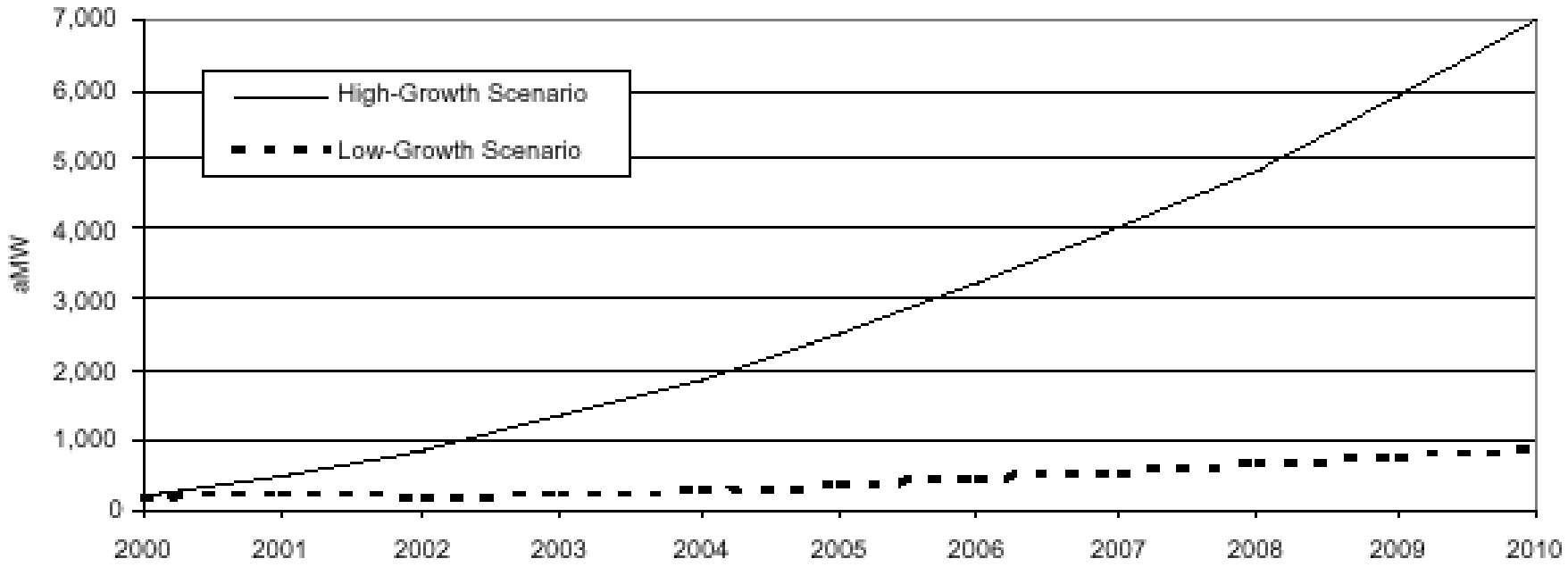

Source: Forecasting the Growth of Green Power Markets in the United States: National Renewable Energy Laboratory, October, 2001.